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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/009,590	04/03/2002	Zhi Xian Chen	2577-124A	1775
6449 7590 08/27/2007 ROTHWELL, FIGG, ERNST & MANBECK, P.C. 1425 K STREET, N.W. SUITE 800 WASHINGTON, DC 20005			EXAMINER KUBELIK, ANNE R	
			ART UNIT 1638	PAPER NUMBER
			NOTIFICATION DATE 08/27/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

PTO-PAT-Email@rfem.com

**Office Action Summary**

Application No.

10/009,590

Applicant(s)

CHEN ET AL.

Examiner

Anne R. Kubelik

Art Unit

1638

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 07 June 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 and 18-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 18-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

### DETAILED ACTION

1. Claims 1-14 and 18-30 are pending.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
3. The indicated allowability of claims 19 and 23-30 is withdrawn in light of the new rejection below.
4. Claims 1-14 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rangan et al (1999, US Patent 5,859,321, filed May 1995) in view of Strickland (WO 97/12512).

### *Claim Rejections - 35 USC § 112*

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.
6. Claims 19-30 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter that was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Neither the instant specification nor the originally filed claims appear to provide support for the embryoid germination medium having KNO<sub>3</sub> at a concentration of 3.8 mg/l. The specification has KNO<sub>3</sub> in that medium at a concentration of 3.8 g/l.

Thus, such a concentration constitutes NEW MATTER. In response to this rejection, Applicant is required to point to support for the concentration or to cancel the new matter.

*Claim Rejections - 35 USC § 102*

7. Claims 1 and 3-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Strickland (WO 97/12512).

Strickland teaches a method of producing a transgenic cotton plant comprising exposing explants, including those from petioles, to *Agrobacterium* comprising a DNA encoding a selectable marker, culturing the explants to induce callus formation, selecting transformed callus, culturing the selected callus in suspension culture to induce embryoid formation, wherein the culture medium contains 0.1 mg/l 2,4-D and 0.1 mg/l kinetin (pg 11, lines 18-24; pg 18, lines 4-16; pg 20, line 15, to pg 21, line 19; pg 26, lines 1-12). The culture media had 30 g/l glucose as the sole carbon source (pg 20, lines 20-21 and Table 1).

*Claim Rejections - 35 USC § 103*

8. Claims 1-6, 12-14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strickland (WO 97/12512).

The claims are drawn to a method of producing a transgenic cotton plant comprising exposing petiole explants to *Agrobacterium* comprising a DNA encoding a selectable marker, culturing the explants to induce callus formation, selecting transformed callus, culturing the selected callus in suspension culture to induce embryoid formation and regenerating the embryoid into a plant, wherein the callus-induction culture medium contains 0.05 mg/l 2,4-D and 0.1 mg/l kinetin, all other media do not contain hormones, and the explants are precultured prior to exposure to *Agrobacterium*.

The teachings of Strickland are discussed above. Strickland also discloses a callus formation protocol in which the explants are transferred from media containing hormones to media not containing hormones (pg 23, Table 2; pg.24, lines 16-25). Strickland do not disclose the culture medium contains 0.05 mg/l 2,4-D and 0.1 mg/l kinetin, all other media do not contain hormones, preculturing the explants prior to exposure to *Agrobacterium*, or the duration of the suspension culture step.

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of producing a transgenic cotton plant as taught by Strickland, to test different hormone concentrations and its presence in the different media. One of ordinary skill in the art would have been motivated to do so to optimize the transformation and regeneration protocol, given that some more calli were formed in the presence of hormones for some cultivars (Table 2). One of ordinary skill in the art would have been motivated to try different suspension culture times in the optimization of the regeneration protocol. One of ordinary skill in the art would have been motivated to preculture the explants prior to exposure to *Agrobacterium* to accustom them to the media before exposure to the bacteria.

9. Claims 7-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Strickland (WO 97/12512) as applied to claims 1-6, 12-14 and 18 above, and further in view of Finer (1988, Plant Cell Rep. 7:399-402).

The claims are drawn to a method of producing a transgenic cotton plant comprising exposing petiole explants to *Agrobacterium* comprising a DNA encoding a selectable marker, culturing the explants to induce callus formation, selecting transformed callus, culturing the selected callus in suspension culture to induce embryoid formation and regenerating the

embryoid into a plant, wherein the culture media for embryoid formation has glutamine and/or arginine as a nitrogen source.

The teachings of Strickland are indicated above. Strickland does not disclose use of a culture media for embryoid formation with glutamine and/or arginine as a nitrogen source.

Finer teaches embryoid formation within 2 weeks in a culture media with 15 mM (about 2.2 g/l) glutamine as a nitrogen source (pg 400, left column, paragraph 1). Finer also teaches a media for producing suspension cultures from callus, wherein the media has 0.1 mg/l 2,4-dichlorophenoxyacetic acid (pg 400, left column, paragraph 4).

At the time the invention was made, it would have been obvious to one of ordinary skill in the art to modify the method of producing a transgenic cotton plant as taught by Strickland, to a culture media with a nitrogen-rich amino acid as a nitrogen source as described in Finer. One of ordinary skill in the art would have been motivated to do so because of Finer's teaching that large numbers of somatic embryos were produced (abstract) and that glutamine was advantageous for somatic embryo development in liquid culture (pg 400, right column, paragraph 5-6). Furthermore, it would be obvious to one of skill in the art to substitute a portion of the glutamine with another nitrogen-rich amino acid like arginine.

10. Claims 19-30 are free of the prior art, given the failure of the prior art to teach or suggest a method of producing a transgenic cotton plant comprising exposing petiole explants to *Agrobacterium* comprising a DNA encoding a selectable marker, culturing the explants to induce callus formation, selecting transformed callus, culturing the selected callus in suspension culture to induce embryoid formation and regenerating the embryoid into a plant, wherein the callus-

Art Unit: 1638

induction culture medium contains 2,4-D and kinetin and wherein the regeneration media contains 3.8 mg/l KNO<sub>3</sub>.

*Conclusion*

11. No claim allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anne R. Kubelik, whose telephone number is (571) 272-0801. The examiner can normally be reached Monday through Friday, 8:30 am - 5:00 pm.

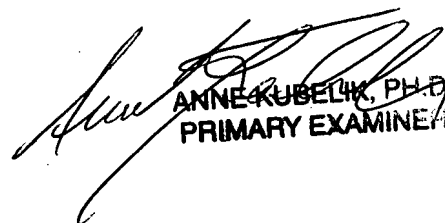
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg, can be reached at (571) 272-0975.

The central fax number for official correspondence is (571) 273-8300.

Patent applicants with problems or questions regarding electronic images that can be viewed in the Patent Application Information Retrieval system (PAIR) can now contact the USPTO's Patent Electronic Business Center (Patent EBC) for assistance. Representatives are available to answer your questions daily from 6 am to midnight (EST). The toll free number is (866) 217-9197. When calling please have your application serial or patent number, the type of document you are having an image problem with, the number of pages and the specific nature of the problem. The Patent Electronic Business Center will notify applicants of the resolution of the problem within 5-7 business days. Applicants can also check PAIR to confirm that the problem has been corrected. The USPTO's Patent Electronic Business Center is a complete service center supporting all patent business on the Internet. The USPTO's PAIR system provides Internet-based access to patent application status and history information. It also enables applicants to view the scanned images of their own application file folder(s) as well as general patent information available to the public.

For all other customer support, please call the USPTO Call Center (UCC) at 800-786-9199.

Anne Kubelik, Ph.D.  
August 17, 2007

  
ANNE KUBELIK, PH.D.  
PRIMARY EXAMINER